

SAMPLING ADDENDUM 1

**NECK/ALBA, SNAP, ORONOCO/DUENWEG, JOPLIN,
THOMS, CARL JUNCTION, AND WACO
DESIGNATED AREAS
TRI-STATE MINING AREA
JASPER COUNTY, MISSOURI**

40114796



Prepared for

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII
KANSAS CITY, KANSAS 66101**

Work Assignment No.	:	C07077
EPA Region	:	VII
Date Prepared	:	March 22, 1993
Contract No.	:	68 W9 0036
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SAMPLING ADDENDUM 1

OVERSIGHT AND SPLIT SAMPLE COLLECTION
OF SURFACE WATER
AT THE TRI STATE MINING AREA
JASPER COUNTY, MISSOURI

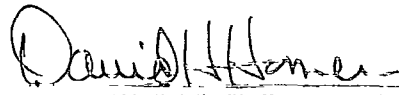
REGIONAL SAMPLING PLAN APPROVAL

I have reviewed Sampling Addendum 1 for oversight and split sampling of the surface water at the Tri-State Mining Area, Jasper County, Missouri, and find that it meets the criteria for technical accuracy for sampling locations, implementation schedule, and sampling procedures.

APPROVAL:


PRC EMI Technical Monitor

3/22/93
Date


PRC EMI Quality Assurance Manager

3/22/93
Date

EPA Work Assignment Manager

Date

EPA Quality Assurance Manager

Date

SAMPLING ADDENDUM 1

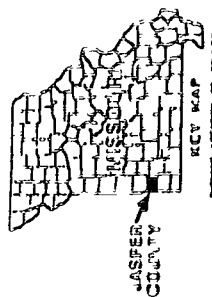
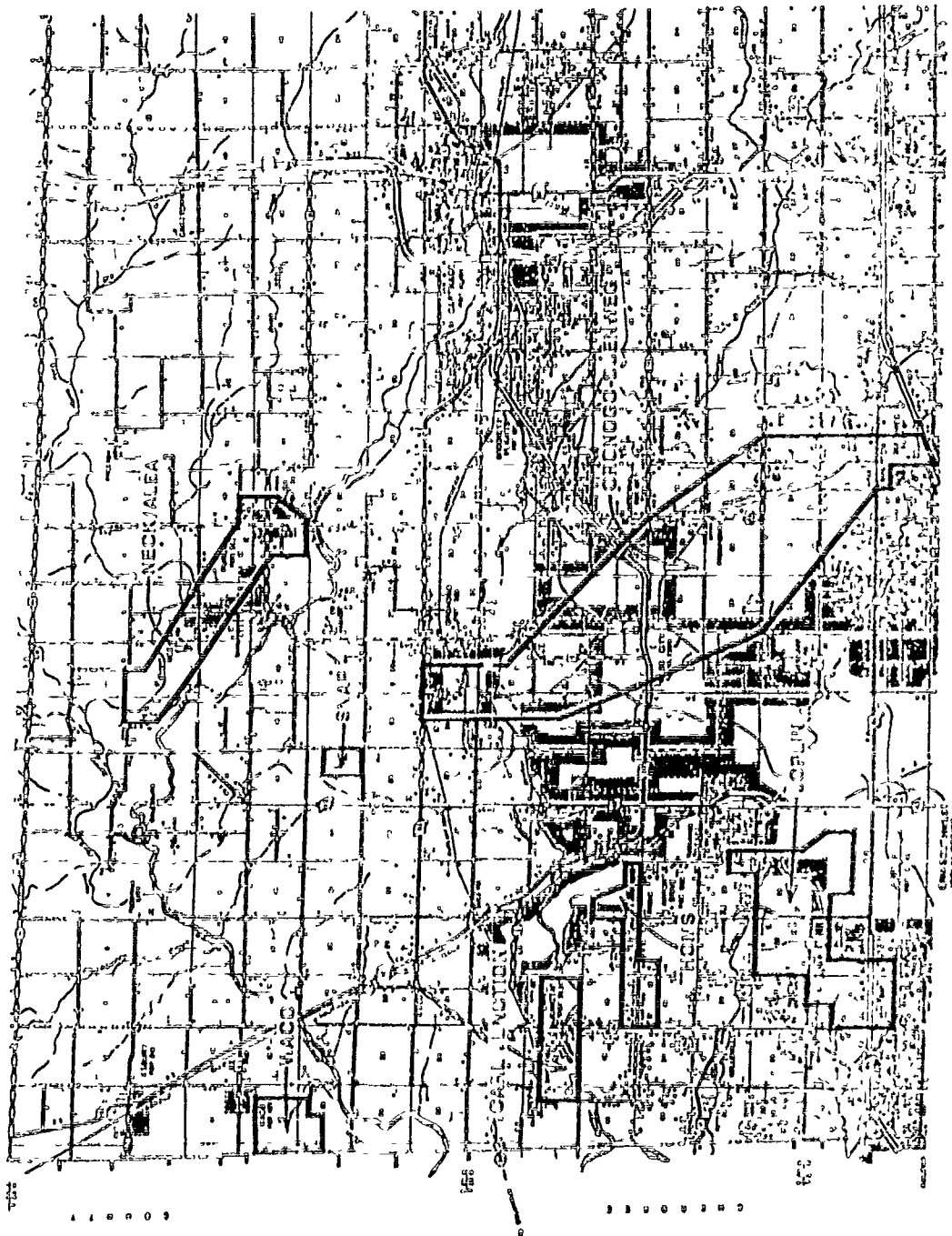
OVERSIGHT AND SPLIT SAMPLE COLLECTION
OF SURFACE WATER
AT THE TRI STATE MINING AREA
JASPER COUNTY, MISSOURI

The U.S. Environmental Protection Agency (EPA) has asked the PRC Environmental Management, Inc. (PRC) TES IX team to conduct oversight and split sampling at the Neck/Alba, Snap, Oronogo/Duenweg, Joplin, Thoms, Carl Junction, and Waco Designated Areas (DA) of the Jasper County site, in Jasper County, Missouri. B&V Waste Science and Technology Corp. (BVWST), PRC's subcontractor under the TES IX contract, will provide technical support under this work assignment to the EPA. The objective of this oversight and sampling is to evaluate the sample collection procedures used by the Respondent's environmental contractor (Dames & Moore (D&M)) and to assess the accuracy of the analytical laboratory used by D&M. BVWST oversight and split sampling activities will follow the PRC Quality Assurance Project Plan (QAPP) for TES IX contracts dated May 1992 (PRC, 1992). Figure 1-1 illustrates the location of these DAs.

Sampling Addendum 1 addresses the site-specific aspects of the surface water sampling and oversight activity including the designated split samples to obtain; rationale for selection of those split samples; and method of analyses for the samples.

SAMPLING OBJECTIVES

Analyses of the split samples collected during this media-specific oversight and sampling event will be used to assess the accuracy of the Respondent's analytical laboratory (Core Laboratories). The concentrations levels of interest are included in Attachment B with the Analytical Services Request form. An acceptance window for the allowable relative percent difference (RPD) between the Respondent's matrix results and the EPA split sample results has been established based on the *Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses* (dated June 1988). For analytical results > 5 times the CRDL (or preferred EPA detection limit), a RPD of ± 20 percent is acceptable. For analytical results < 5 times the



* LIST OF DESIGNATED AREAS

NECK / ALEA
SNAP
DRONOGO - DLENWEG
JOPLA
THOMAS
CARL JUNCTION
VACC

* DEVELOPED AREA BOUNDARIES SUBJECT TO CHANGE IN ACCORDANCE WITH THE AEC

SPACE AND TECHNOLOGY CORP.



0 1 2 3 4 MILES



SOURCE (D.B.M., 1992) FROM ERV - SOUTHWEST, INC

FIGURE 1-
DESIGNATED AREAS LOCATION MAP
JASPER COUNTY SITE

PLANS DS-60-007-001-001

CRDL, the Respondent's matrix results must be within \pm the CRDL of the EPA split sample results.

TARGET ANALYTES

The target analytes for surface water at the Tri-State Mining Area are primarily total metals. The target analytes for the sediment sample collected is also total metals. The trash pond will additionally be analyzed for volatile organics, semi-volatile organics, and pesticides and PCBs to verify the hazards associated with the trash in the pond. These target analytes are identified in the Sampling and Analysis Plan for the Neck/Alba, Snap, Oronogo/Duenweg, Joplin, Thomas, Carl Junction, and Waco DAs of the Jasper County site revised by D&M in February 1993.

SAMPLING LOCATIONS AND RATIONALE

Pond Sampling BVWST will obtain split surface water samples from four of the ponds identified in the D&M SAP. These locations were chosen because they provide a variation in the depths of ponds (i.e., 35 ft or 70 ft) with potential contamination from the various features of the past mining activities of the area. Attachment A-1 illustrates the location of these pond samples. Split samples should be collected at the following D&M sample locations:

<u>D & M Sample #</u>	<u>Type of Feature</u>	<u>Sampling Schedule</u>
OD-98	Subsidence	Aug. 24 - Sept. 12
OD-100	Mine Affected	Aug. 24 - Sept. 12
NA-24	Open Pit	Aug. 24 - Sept. 12
WA-27	Trash	Sept. 6 - Sept. 12

STREAM SAMPLING

These stream sampling locations were chosen because they are geographically distributed across the Tri State Mining Area and may be located either above or below stream of the DAs.

High Flow Stream Sampling (Phase 1) BVWST will obtain six split surface water samples from the first phase high-flow stream sampling event in the DAs listed below. This sampling event will take place from approximately May 12

through May 16, 1993. Attachment A-2 illustrates the location of the D&M samples:

<u>Location</u>	<u>D&M Sample #</u>
"Background"	SR 1
Neck/Alba	NF 2
Snap	--
Joplin	TC-4
Oronogo/Duenweg	CC-4
Thoms	SR-5
Carl Junction	CC-6
Waco	--

High Flowing Mine Opening BVWST will obtain a split surface water sample from the mine opening located at the A Street Shaft. This split sample will be obtained from D&M during the week of June 28, 1993. Attachment A-3 illustrates the location of the D&M sample.

High-Flow Stream Sampling (Phase II) - BVWST will obtain seven split surface water samples from the second phase high flow stream sampling event in the DAs listed below. This sampling event will occur from June 30 through July 4, 1993. Attachment A 2 illustrates the location of these D&M samples. The location of the split samples designated for this sampling event are subject to change based upon an evaluation of the Phase I High-flow sample results:

<u>Location</u>	<u>D&M Sample #</u>
Neck/Alba	NF-T1
Snap	ST 1
Joplin	LEC-1
Oronogo/Duenweg	BB 1
Thoms	CC-T4
Carl Junction	CC-T5
Waco	WT 1

Low Flow Stream Sampling BVWST will obtain three split surface water samples for the low flow stream sampling event. The split low flow stream samples to be obtained include D&M sample NF-2, TC 3, and CC 5. This sampling event will occur from approximately August 24 through September 12, 1993. Attachment A-2 illustrates the location of the D&M samples specified above.

Streambed Sediment Sampling BVWST will obtain a split streambed sediment sample from the D&M sediment sample collected at TC 3. This split sample will be collected between August 24 and September 12, 1993. Attachment A-4 illustrates the location of the D&M sample designated above.

Low Flowing Mine Opening and Spring - BVWST will obtain one split surface water sample from each of the low flow mine opening and spring sampling events. A split sample will be obtained from each of the Unity Mine opening and the Radar Station Spring. These sampling events will occur from approximately August 24 through September 12, 1993. Attachment A-3 illustrates the location of the D&M samples designated above.

QC SAMPLES

To check the quality of the field data, quality control (QC) samples will be collected for laboratory analysis. For this surface water sampling event the following QC samples will be collected from the split sample locations specified by the BVWST field personnel:

<u>QC Sample</u>	<u>Number Collected</u>
Field Duplicate	2
Matrix Spike	1
Matrix Spike Duplicate	1

In addition to the QC samples specified above, three performance evaluation samples prepared by the USEPA Region VII laboratory will be submitted to the Respondent's laboratory. The PE samples will be transferred to the sample bottles used by D&M and shipped along with the D&M primary samples.

ANALYTICAL METHODS AND SAMPLE CONTAINERIZATION

To evaluate the Respondent's laboratory, BVWST will request that the samples specified in this addendum be analyzed as described below.

<u>Parameter</u>	<u>Matrix</u>	<u>Method</u>
Total Metals	Water	SW-846 Method 3005/6010
Total Metals	Sediment	SW-846 Method 3005/6010
Lead	Water	SW-846 Method 7421
Selenium	Water	SW-846 Method 7740
Volatiles*	Water	SW-846 Method 8240
Semi-volatiles*	Water	SW-846 Method 8270
Pesticides/PCBs*	Water	SW-846 Method 8080

* Only for Trash Pond split sample.

The split surface water samples will be collected and preserved in containers as specified below:

<u>Parameter</u>	<u>Preservative</u>	<u>Container</u>	<u>Holding Time</u>
Metals	HNO ₃ , pH < 2	1 L Cubitainer	6 months
Volatiles	Cool to 4°C	2-40 mL vials	14 days
Semi-volatiles	Cool to 4°C	2-80 oz amber glass bottles	7 days Extract/ 40 days Analysis
Pesticides/PCBs	Cool to 4°C	same as above	same as above

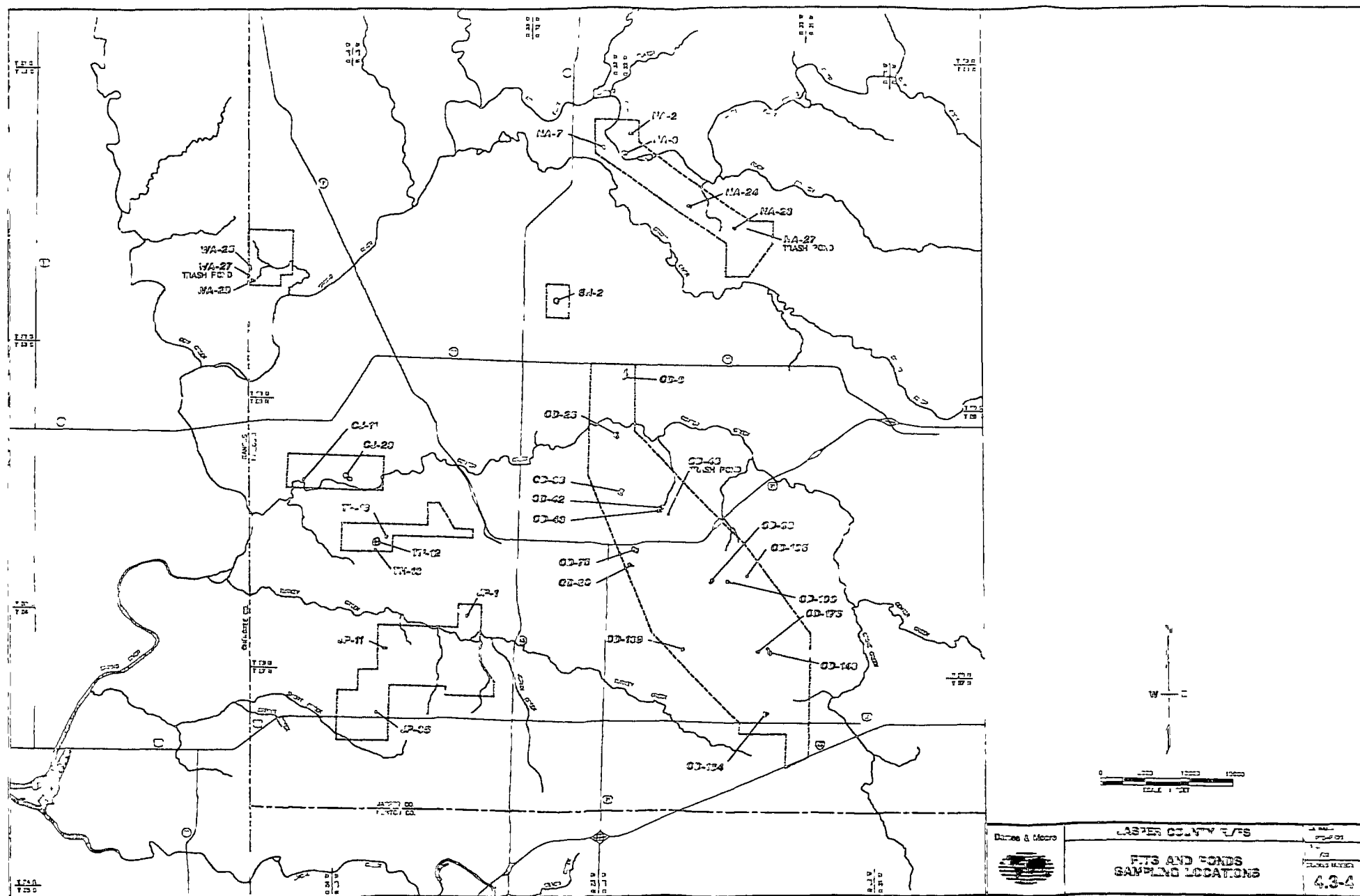
The split sediment sample will be collected in an 8-oz. glass jar and cooled to 4°C. The holding time for sediment samples to be analyzed for total metals is 6 months.

SCHEDULE OF SAMPLING ACTIVITIES

BVWST will conduct the oversight and split sampling for each of these sampling events from March 29 through September 12, 1993 in accordance with the Respondent's sampling schedule. These split samples will be delivered to EPA Region VII within the required holding times requirement. EPA will be notified of exact sample delivery date.

ATTACHMENT A
SAMPLE LOCATION MAPS

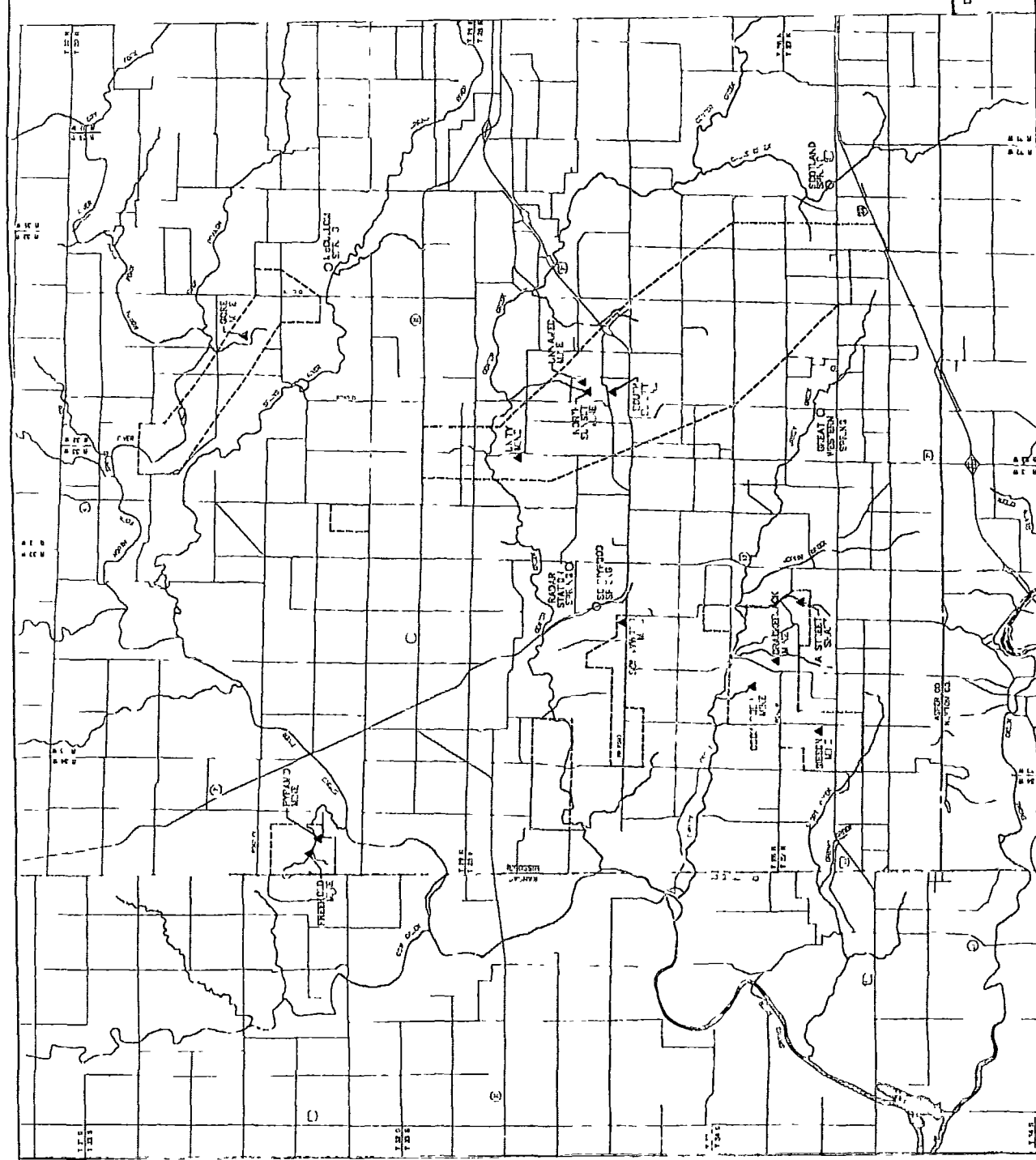
ATTACHMENT A-1
POND SAMPLING LOCATIONS



ATTACHMENT A-2
STREAM SAMPLING LOCATIONS

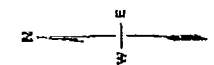
ATTACHMENT A-3

FLOWING MINE OPENINGS AND SPRING SAMPLING LOCATIONS



SECTION

O - SPR. 2
▲ - FLOWING MINE OPENING AND SPRING LOCATIONS

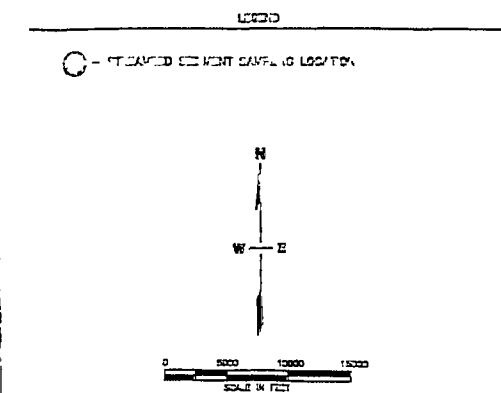
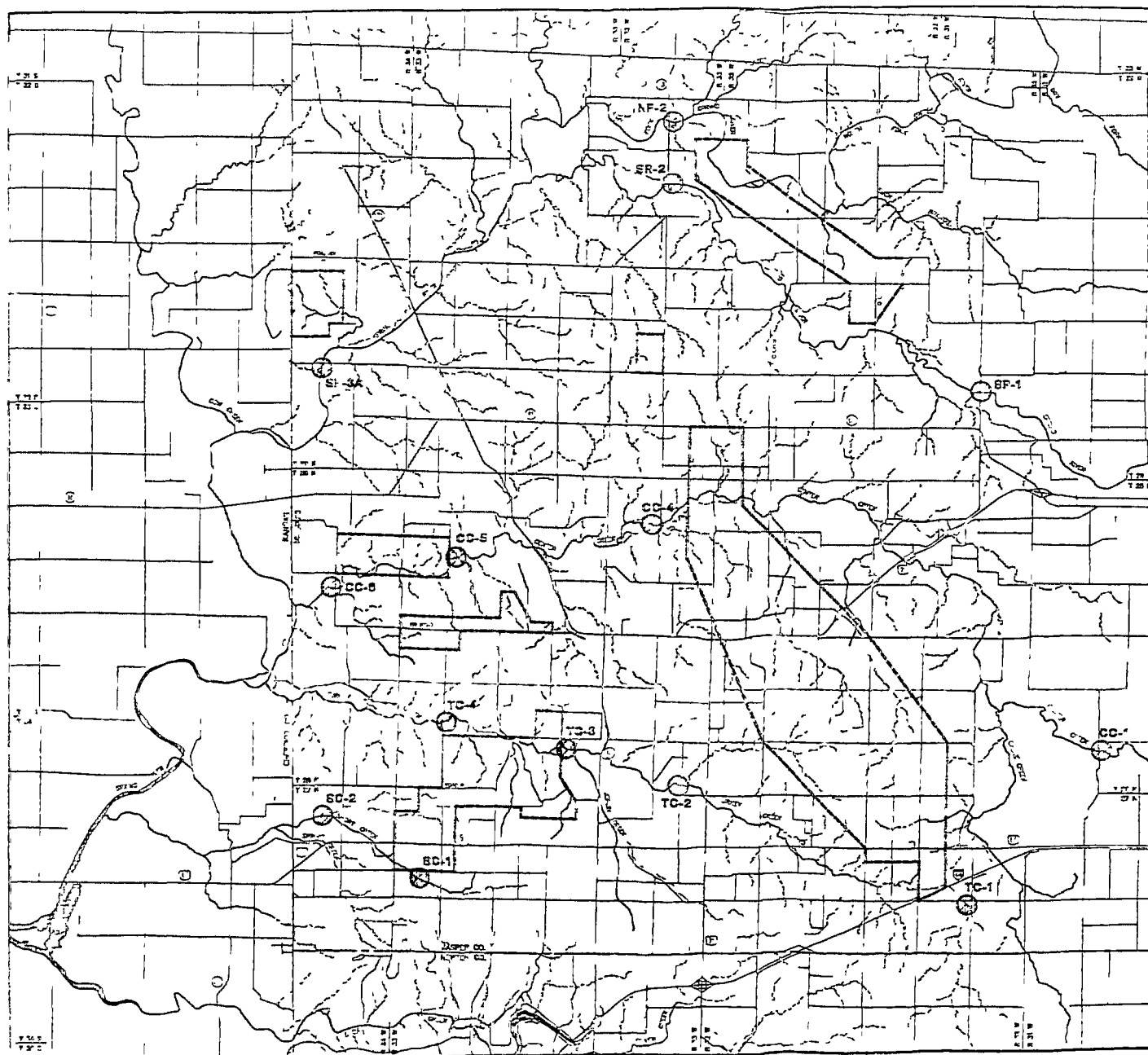


Darius E. Hearn

JASPER COUNTY ARK.

FLOWING MINE OPENING AND SPRING LOCATIONS
4.3-5

ATTACHMENT A-4
STREAMBED SEDIMENT SAMPLING LOCATIONS



Deane & Moore



JASPER COUNTY RI/FS

STREAMBED SEDIMENT
SAMPLING LOCATIONS

4.3-2

ATTACHMENT B

ANALYTICAL SERVICES REQUEST FORM

USEPA Region VII Analytical Services Request (ASR) Form

Activity No.: Date: 3/12/93
 Site Name, City, & State: Tri State Mining Area, Jasper County, MO
 EPA Project Leader: Mark Regina
 Sect./Branch: Superfund Phone No.: 531-7528
 Contractor Contact: Ernie Willis / Robin Wankam
 Contractor: Ray Waste Science and Tech Phone No.: 338-6441
 Projected Sample Delivery Date: several shipments beginning 4/16/93
 Funding Program Element:

Request Summary:

No. of Samples	Matrix	Group/Parameter Name	Group / Parameter MCP Code
27	Water	Metals	W35
1	Water	35 - Volatiles Organics	WV
1	Water	Semi-Volatiles, Pesticides, Metals	W01
1	Sediment	Total Metals	SM

Use additional pages as needed for clarity.
 Levels of Interest Must Be Specified (check one): In The QAPP ☒, Or On The Back-Side Special Requirements Or Comments: (e.g. special data review, hazards, etc.)
 • Request CLP CRDLs and CRDLs
 • Metals to be analyzed are listed on following page
 • Please include preservative already in cubitainers

NOTE: Submit This Form To RQAM/ENSV 30 Days Before Sample Delivery

Approval:

EPA Project Leader (Date) EPA Branch or Section Chief (Date)

The following is to be completed by ENSV personnel ONLY
 Type of QAPP: ☐-generic ☐-site specific ☐-other

RQAM: Comment:

LABO: Laboratory Assignment: Comment: who called telephone:

☐-Region VII.
☐ PRAT
☐-CLP
☐ R/CAP
☐-Other Date:

Analyst/Manager
☒ EPA Project Leader
☒ Chief, LABO/ENSV
☐ Chief, CHAM/IAHO
☐ Chief, GRCP/IAHO
☒ Chief, CLPM/LABO
☒ Data Coordinator
☒ NSGC
☐ Other:

NOTE: See Back For Levels of Interest
 (Revised July '92)

(Use Additional Copies Of This Form As Needed)

Activity No.: _____

[illegible]

**USEPA Region VII
Sampling Supplies Request Form**

Activity No.: _____ Site Name: Tri-State Mining Area, Jasper County, MO

Contact Name: Robin Wankum Telephone No.: 388-6544

Date Equipment to be Picked Up: 3/25/93

Item Description Amount Needed

Sample Containers:

4-oz. Plastic Bottle	.....	27
1-Liter Plastic Cubitainer	.....
4-Liter Plastic Cubitainer	.....
8-Liter Plastic Cubitainer	.....
20-Liter Plastic Cubitainer	.....
40-ml Glass Vials (2 ea. for VOA, 4 ea. for low DL VOA)	.....	2
8-oz. Wide Mouth Glass Jar	.....	1
32-oz. Wide Mouth Glass Jar	.....
8-oz. Amber Glass Bottle	.....
80-oz. Amber Glass Bottle	.....	2
4-Liter Amber Glass Bottle	.....

Sampling Supplies:

Sampling Spoon	
Aluminum Pan	.....
1-gal. Metal Paint Can (with Vermiculite®)	.....
1-gal. Metal Paint Can (with Vermiculite®)	.....
Other:	.....
Other:	.....

Preservatives:

HCl (1:1)	.....	27
HNO ₃ (1:1)	.....
H ₂ SO ₄ (Concentrated)	.....
NaOH (Pellets)	.....
Charcoal Thimbles	.....
Other:	.....

Shipping Supplies:

Large Plastic Bags (ice chest liner)	.....	5
Ice Chests	.....	2
Fiber Tape (by roll)	.....	2
Custody-Seal Tape (by piece, not roll)	.....	10
Chain-Of-Custody Forms	.....	2

Quality Control Samples:

Water Trip Blanks (VOA only)	.....
Soil Trip Blanks (VOA only)	.....

Performance Evaluation (PE) Samples:

No. of PE Sample	Matrix	Target Analytes	Desired Concentration Range
3	Water	Metals	> CRDL